

IN THE CLAIMS

1. (currently amended) A packaged semiconductor chip comprising:

(a) a first semiconductor chip having a front face, a rear face, edges bounding said faces and contacts exposed at said front ~~surface~~face;

(b) a second chip, said second chip having front and rear surfaces and contacts on said front surface, at least some of the contacts on said second chip being electrically connected to at least some of said contacts on said first chip, said front surface of said second chip facing upwardly and confronting a face of said first chip;

(c) a chip carrier disposed below said rear surface of said second chip, said chip carrier having a bottom surface facing downwardly away from said second chip and having a plurality of terminals exposed at said bottom surface for connection to a circuit panel, at least some of said terminals being electrically connected to at least one of said chips, said chip carrier further having an opening coinciding with at least a portion of said rear surface of said second chip, said opening being sized and disposed to coincide with a thermally conductive element of the circuit panel when said packaged semiconductor chip is mounted to the circuit panel.

2. (currently amended) An assembly including a packaged semiconductor chip as claimed in claim 1, said assembly ~~further~~ comprising:

a circuit panel mounted to said bottom surface of said chip carrier, said circuit panel including the thermally conductive element; and

thermally conductive material connecting said rear surface of said second chip to said thermally conductive element of said circuit panel such that said rear surface of

said second chip thermally communicates with said circuit panel through said thermally conductive material.

3. (currently amended) An assembly as claimed in claim 2, wherein said thermally conductive material includes solder.

4. (currently amended) An assembly as claimed in claim 2, wherein said thermally conductive material ~~is provided from~~includes a thermally conductive paste.

5-7. (cancelled)

8. (currently amended) A packaged chip as claimed in ~~claims 1 or 5~~claim 1, wherein said second chip includes a plurality of passive electrical components.

9. (currently amended) A packaged chip as claimed in claim ~~7-8~~8 comprising a plurality of said second chips.

10. (currently amended) A packaged chip as claimed in ~~claims 1 or 5~~claim 1, further comprising one or more discrete passive electrical components ~~being~~ electrically connected to the terminals of said chip carrier.

11. (currently amended) A packaged chip as claimed in ~~claims 1 or 5~~claim 1, further comprising a plurality of discrete passive electrical components electrically connected to at least one of said chips.

12. (currently amended) A packaged chip as claimed in claim 1, wherein each of the faces of said first chip has a

first area, ~~wherein~~ and said opening of said chip carrier coincides with said rear surface of said second chip over a second area larger than said first area.

13. (cancelled)

14. (currently amended) A packaged chip as claimed in ~~claims 1 or 5~~ claim 1, wherein said rear face of said first chip faces downwardly towards said front surface of said second chip.

15. (currently amended) A packaged chip as claimed in claim 14, further comprising leads connecting at least some of the contacts of said first chip and at least some of said contacts of said second chip.

16. (currently amended) A packaged chip as claimed in claim 14, further comprising a thermally-conductive layer between said rear face of said first chip and said front face of said second chip.

17. (currently amended) A packaged chip as claimed in ~~claims 1 or 5~~ claim 1, wherein said front face of said first chip faces downwardly towards said front surface of said second chip.

18. (currently amended) A packaged chip as claimed in claim 17, wherein said contacts of said first chip are bonded to said contacts of said second chip, said first chip being in thermal communication with said second chip through said bonded contacts.

19. (currently amended) A packaged chip as claimed in claim 18, further comprising a thermally conductive underfill between said first and second chips, said first chip being in thermal communication with said second chip through said underfill.

20. (currently amended) A packaged chip as claimed in ~~claims 1 or 5~~ claim 1, wherein said chip carrier is a sheet-like element having thickness less than about 150 microns.

21. (currently amended) A packaged chip as claimed in ~~claims 1 or 5~~ claim 1, wherein said thermal conductor and said terminals are adapted for surface mounting to a circuit board.

22. (currently amended) A packaged chip as claimed in ~~claims 1 or 5~~ claim 1, wherein said first chip is a radio frequency amplifier chip.

23-44. (cancelled)